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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,361	06/20/2003	Jean-Marie Andrieu	1187-R-02	7112

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EXAMINER	
LE, EMILY M	
ART UNIT	PAPER NUMBER
1648	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/600,361	ANDRIEU ET AL.	
	Examiner	Art Unit	
	Emily Le	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *43-47 and 52-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *43-47 and 52-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1-42 and 48-51 are cancelled. Claims 52-56 were added. Claims 43-47 and 52-56 are pending and under examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 43 and 45-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Buseyne et al.[1]

In response to the rejection, Applicant submits that Buseyne et al. does not teach the use of autologous HIV strain.

Applicant's submission has been considered, however, it is not found persuasive. In response to applicant's argument that the references fail to show certain feature of applicant's invention, it is noted that the feature upon which Applicant relies (i.e., autologous HIV) is not recited in the rejected claims, claims 43 and 45-47.

In addition to above, Applicant also submits Buseyne et al. does not teach or suggest a pharmaceutical composition comprising a therapeutically effective amount of an antigen presenting cell pulsed with an inactivated non recombinant HIV and a

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[1] Buseyne et al. MHC-I-restricted presentation of HIV-1 virion antigens without viral replication. Nature Medicine, March 2001, Vol. 7, No. 3, pages 344-349.

pharmaceutically acceptable carrier. To support Applicant's position, Applicant notes that Buseyne et al. generally describes that exposure of dendritic cells to AT-2 inactivated HIV strain induces IFN-gamma production. Applicant further notes that the experiment described by Buseyne et al. was carried out in an *in vitro* setting.

Applicant's submission has been considered, however, it is not found persuasive. In the instant case, while the experiment of Buseyne et al. was carried out in an *in vitro* setting, the fact remains that Buseyne et al. teaches composition comprising an antigen-presenting cell pulsed with an inactivated non-recombinant HIV that has been inactivated with AT-2. Additionally, the composition of Buseyne et al. also comprises a carrier. The carrier that Buseyne et al. is medium. In the instant case, the recitation pharmaceutically acceptable carrier is given its broadest and reasonable interpretation. That is, the recitation encompasses all carriers, as long as the carrier is not toxic for consumption. Hence, the medium used by Buseyne et al. is considered a pharmaceutically acceptable carrier. Additionally, in the absence of any indication that the recitation "therapeutically effective amount" is limited to a specific amount or range of amount, the recitation is given it's broadest and reasonable interpretation, which includes all amounts. Thus, Buseyne et al. teaches a pharmaceutical composition comprising a therapeutically effective amount of an antigen-presenting cell pulsed with an inactivated non-recombinant HIV that has been inactivated with AT-2 and a pharmaceutically acceptable carrier. Furthermore, it should be noted that the claimed invention is a composition, regardless of the method or setting involved in making the

composition. Hence, Buseyne et al. does not need to conduct his experiments in an *in vivo* setting to anticipate the claimed pharmaceutical composition.

The claims are directed to a pharmaceutical composition comprising an antigen presenting cell pulsed with an inactivated non-recombinant human immunodeficiency virus (HIV) and a pharmaceutically acceptable carrier, wherein the inactivated non-recombinant human immunodeficiency virus is chemically inactivated by 2,2'-dithiopyridine. Claim 45, which depends on claim 43, limits the antigen-presenting cell to dendritic cell. Claim 46, which limits claim 45, requires the dendritic cell to be autologous dendritic cell. Claim 47, which depends on claim 45, requires the dendritic cell to a monocyte derived dendritic cell.

Buseyne et al. teaches a composition comprising an antigen-presenting cell pulsed with an inactivated non-recombinant human immunodeficiency virus (HIV) and a pharmaceutically acceptable carrier. Buseyne et al. inactivated non-recombinant human immunodeficiency virus (HIV) using 2,2'-dithiopyridine (also known as Aldrithiol-2 (AT-2)). The antigen-presenting cell that Buseyne et al. teaches is autologous monocyte derived dendritic cell. [See CTL assays section, page 349 of Buseyne et al.] In the instant, Buseyne et al. teaches a composition that is the same as claimed. Thus, Buseyne et al. anticipates the claimed invention.

It is noted that the claims require the composition to expands in vivo expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells; however, MPEP § 2112 [R-3] (I) provides: [T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's

functioning, does not render the old composition patentably new to the discoverer." Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). In In re Crish, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004), the court held that the claimed promoter sequence obtained by sequencing a prior art plasmid that was not previously sequenced was anticipated by the prior art plasmid which necessarily possessed the same DNA sequence as the claimed oligonucleotides. The court stated that "just as the discovery of properties of a known material does not make it novel, the identification and characterization of a prior art material also does not make it novel." Id.

In the instant, while it may be true that Applicant discovers that the claimed composition expands *in vivo* expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells; however, this discovery does not make the composition patentable over the composition of Buseyne et al. Buseyne et al. teaches a composition that is the same as instantly claimed. The composition of Buseyne et al. is the claimed composition. Hence, Buseyne et al. does not need to teach that the composition expands *in vivo* expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells to anticipate the claimed invention. The composition of Buseyne et al. would have the same properties or functions recognized by Applicant.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 52-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buseyne et al., as applied above to claim 43, in view of Lu et al.[2]

In response to the rejection, Applicant submits that Buseyne et al. does not teach or suggest all the limitations recited in claims 52-56. To support Applicant's position, Applicant notes that Buseyne et al. generally describes that exposure of dendritic cells to AT-2 inactivated HIV strain induces IFN-gamma production. Applicant further notes that the experiment described by Buseyne et al. was carried out in an *in vitro* setting.

Applicant's submission has been considered, however, it is not found persuasive. In the instant case, while the experiment of Buseyne et al. was carried out in an *in vitro* setting, the fact remains that Buseyne et al. teaches composition comprising an antigen-presenting cell pulsed with an inactivated non-recombinant HIV that has been inactivated with AT-2. Additionally, the composition of Buseyne et al. also comprises a carrier. The carrier that Buseyne et al. is medium. In the instant case, the recitation pharmaceutically acceptable carrier is given its broadest and reasonable interpretation. That is, the recitation encompasses all carriers, as long as the carrier is not toxic for consumption. Hence, the medium used by Buseyne et al. is considered a

pharmaceutically acceptable carrier. Additionally, in the absence of any indication that the recitation "therapeutically effective amount" is limited to a specific amount or range of amount, the recitation is given it's broadest and reasonable interpretation, which includes all amounts. Thus, Buseyne et al. teaches a pharmaceutical composition comprising a therapeutically effective amount of an antigen-presenting cell pulsed with an inactivated non-recombinant HIV that has been inactivated with AT-2 and a pharmaceutically acceptable carrier. Furthermore, it should be noted that the claimed invention is a composition, regardless of the method or setting involved in making the composition. Hence, Buseyne et al. does not need to conduct his experiments in an *in vivo* setting to anticipate the claimed pharmaceutical composition.

Additionally, Applicant submits that Lu et al. would not motivate one of ordinary skill in the art to use a non-anti-retroviral amount of indinavir, as required by the claims. To support Applicant's position, Applicant submits that the goal of Lu et al. is to induce an antiviral effect, and that Lu et al. does not teach the use of a non-antiviral concentration of indinavir.

Applicant's submission has been considered, however, it is not found persuasive. While the goal of Lu et al. may be directed at inducing an antiviral effect with indinavir, however, it should be recognized that Lu et al. is interested in repairing T cell proliferation response with the administration of various concentrations of indinavir, wherein the suggested concentrations include Applicant's claimed non antiviral concentration. In the instant case, it remains that Lu et al. teaches the use of indinavir

[2] Lu et al. HIV protease inhibitors restore impaired T-cell proliferative response in vivo and in vitro: a viral-

at concentrations ranging from .1nM to 1000 nM. The concentration range of Lu et al. encompasses 10 nM, which Applicant asserts as a non-antiviral concentration. Hence, Lu et al. teaches the use of a non-antiviral concentration of indinavir. It should be noted that Lu et al. does not need to recognize this non-antiviral concentration of indinavir for it is inherently present in the composition.

Applicant also submits that Lu et al. does not disclose a pharmaceutical composition comprising a therapeutically effective amount of an antigen-presenting cell pulsed with an inactivated non-recombinant human immunodeficiency virus and a pharmaceutically acceptable carrier.

Applicant's submission has been considered, however, it is not found persuasive. In the instant case, it should be noted that the rejection is an obviousness rejection rather than an anticipatory rejection. If Lu et al. discloses a pharmaceutical composition comprising a therapeutically effective amount of an antigen-presenting cell pulsed with an inactivated non-recombinant human immunodeficiency virus and a pharmaceutically acceptable carrier, Lu et al. would have been cited to anticipate such composition.

Applicant also submits that the Office has applied an improper "obvious to try" rationale. To support Applicant's submission, Applicant notes that there would be no reasonable expectation of success for combining the references because Buseyne provides no evidence that the composition would be effective in an in vivo setting. Applicant's submission has been considered, however, it is not found persuasive. As stated, while the experiment of Buseyne et al. was carried out in an *in vitro* setting, the

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suppression-independent mechanism. Blood, Jul 2000; Vol. 96, 250 - 258.

fact remains that Buseyne et al. teaches a pharmaceutical composition comprising an antigen-presenting cell pulsed with an inactivated non recombinant HIV that has been inactivated with AT-2 with a pharmaceutically acceptable carrier. It should be noted that the claimed invention is a composition, regardless of the method or setting involved in making the composition. Hence, Buseyne et al. does not need to conduct his experiments in an *in vivo* setting to anticipate the claimed pharmaceutical composition or to show a reasonable expectation of success. In the instant case, Buseyne et al. teaches a pharmaceutical composition comprising an antigen-presenting cell pulsed with an inactivated non-recombinant HIV that has been inactivated with AT-2 with a pharmaceutically acceptable carrier.

Lastly, Applicant submits that the Office has used impermissible hindsight that is based on Applicant's disclosure.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In the instant case, the reasoning provided by the Office takes into account only knowledge that is within the level of ordinary skill in the art at the time the invention was

made, as evidenced by citation of Buseyne et al., Lu et al., and Lieberman et al.; and not from Applicant's disclosure, as alleged.

The claims require the composition to further comprise an adjuvant. The adjuvant is later limited to a protease inhibitor by claim 53, which depends on claim 52. The protease inhibitor is later limited indinavir by claim 54, which depends on claim 53. Claim 55, which depends on claim 54, later requires that the composition comprise a non-antiviral concentration of indinavir. And claim 56 limits the non-antiviral concentration to 10 nM.

The significance of Buseyne et al. is provided above. As presented above, Buseyne et al. teaches the composition of claim 43. It should be noted that Buseyne et al. teaches that the composition is a potent stimulator of CTL response.

Buseyne et al. does not teach the composition with 10 nM of indinavir. However, the deficiency of Buseyne et al. is fully compensated by Lu et al. Lu et al. teaches that indinavir direct up-regulate proliferation and down regulate apoptosis of T cells. [Paragraph bridging pages 247-248.]

Thus, would have been prima facie obvious for one of ordinary skill in the art to combine the teachings of Buseyne et al. and Lu et al. One of ordinary skill in the art would have been motivated to do so to optimize CTL response against infection with human immunodeficiency virus. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because indinavir stimulates the proliferation of T cells, and the composition of Buseyne et al. stimulates potent CTL response.

It is recognized that claims require the composition to contain non-antiviral concentration of indinavir, specifically 10 nM. In the instant, Lu et al. teaches that the extent in which indinavir up-regulate proliferation and down regulate apoptosis of T cells varies at different concentrations of indinavir. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use any concentrations of indinavir, particularly since Lu et al. establishes that indinavir at various concentrations, ranging from .1nM to 1000 nM, stimulates direct up-regulate proliferation and down regulate apoptosis of T cells. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to determine the optimum concentration to optimize the proliferation of T cells. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because the determination of workable ranges or optimal value is routine practiced in the art.

6. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buseyne et al. in view of Lieberman et al.[3]

In response to the rejection, Applicant submits that Buseyne et al. does not teach or suggest all the limitations recited in claims 52-56. To support Applicant's position, Applicant notes that Buseyne et al. generally describes that exposure of dendritic cells to AT-2 inactivated HIV strain induces IFN-gamma production. Applicant further notes that the experiment described by Buseyne et al. was carried out in an *in vitro* setting.

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[3] Lieberman et al. Dressed to kill? A review of why antiviral CD8 T lymphocytes fail to prevent progressive immunodeficiency in HIV-1 infection. Blood, September 2001, Vol. 98, No. 6, 1667-1677.

Applicant's submission has been considered, however, it is not found persuasive. In the instant case, while the experiment of Buseyne et al. was carried out in an *in vitro* setting, the fact remains that Buseyne et al. teaches composition comprising an antigen-presenting cell pulsed with an inactivated non-recombinant HIV that has been inactivated with AT-2. Additionally, the composition of Buseyne et al. also comprises a carrier. The carrier that Buseyne et al. is medium. In the instant case, the recitation pharmaceutically acceptable carrier is given its broadest and reasonable interpretation. That is, the recitation encompasses all carriers, as long as the carrier is not toxic for consumption. Hence, the medium used by Buseyne et al. is considered a pharmaceutically acceptable carrier. Additionally, in the absence of any indication that the recitation "therapeutically effective amount" is limited to a specific amount or range of amount, the recitation is given it's broadest and reasonable interpretation, which includes all amounts. Thus, Buseyne et al. teaches a pharmaceutical composition comprising a therapeutically effective amount of an antigen-presenting cell pulsed with an inactivated non-recombinant HIV that has been inactivated with AT-2 and a pharmaceutically acceptable carrier. Furthermore, it should be noted that the claimed invention is a composition, regardless of the method or setting involved in making the composition. Hence, Buseyne et al. does not need to conduct his experiments in an *in vivo* setting to anticipate the claimed pharmaceutical composition.

Applicant also submits that Lieberman et al. does not disclose a pharmaceutical composition comprising a therapeutically effective amount of an antigen-presenting cell

pulsed with an inactivated non-recombinant human immunodeficiency virus and a pharmaceutically acceptable carrier.

Applicant's submission has been considered, however, it is not found persuasive. In the instant case, it should be noted that the rejection is an obviousness rejection rather than an anticipatory rejection. If Lieberman et al. discloses a pharmaceutical composition comprising a therapeutically effective amount of an antigen-presenting cell pulsed with an inactivated non-recombinant human immunodeficiency virus and a pharmaceutically acceptable carrier, Lieberman et al. would have been cited to anticipate such composition.

Additionally, Applicant submits that the Office has applied an improper "obvious to try" rationale. To support Applicant's submission, Applicant notes that there would be no reasonable expectation of success for combining the references because Buseyne provides no evidence that the composition would be effective in an in vivo setting. Applicant's submission has been considered, however, it is not found persuasive. As stated, while the experiment of Buseyne et al. was carried out in an *in vitro* setting, the fact remains that Buseyne et al. teaches a pharmaceutical composition comprising an antigen-presenting cell pulsed with an inactivated non recombinant HIV that has been inactivated with AT-2 with a pharmaceutically acceptable carrier. It should be noted that the claimed invention is a composition, regardless of the method or setting involved in making the composition. Hence, Buseyne et al. does not need to conduct his experiments in an *in vivo* setting to anticipate the claimed pharmaceutical composition or to show a reasonable expectation of success. In the instant case, Buseyne et al.

teaches a pharmaceutical composition comprising an antigen-presenting cell pulsed with an inactivated non-recombinant HIV that has been inactivated with AT-2 with a pharmaceutically acceptable carrier.

Lastly, Applicant submits that the Office has used impermissible hindsight that is based on Applicant's disclosure.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In the instant case, the reasoning provided by the Office takes into account only knowledge that is within the level of ordinary skill in the art at the time the invention was made, as evidenced by citation of Buseyne et al., Lu et al., and Lieberman et al.; and not from Applicant's disclosure, as alleged.

Claim 44, which is directed to the same invention as claim 43, with the exception that claim 44 requires the inactivated human immunodeficiency virus to be an inactivated autologous HIV.

The significance of Buseyne et al., as applied to claim 43, is provided above. Buseyne et al. does not teach the use of autologous HIV.

However, at the time the invention was made, it is well known in the vaccinology art that viral mutation of the epitopic sequence recognized by HIV-specific CTL can sidestep CTL recognition, as evidenced by Lieberman et al. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use an autologous HIV epitopic sequence. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to induce a CTL response against HIV. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because CTL recognition is important to controlling HIV infectivity.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and In *re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 43-47 and 52-56 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 11/138171 in view of Buseyne et al., Lu et al., and Lieberman et al.

In response to this rejection, Applicant notes that Applicant will address this rejection upon allowance of claims 43-47 and 52-56.

Applicant's submission has been noted. Until the rejection is properly addressed, the rejection is maintained.

Claim 1 of the conflicting patent application is directed at a composition comprising a demethylating agent and an antigen.

The difference between claims 43-47 and 52-56 of the instant application and claim 1 of the conflicting application is: claim 1 of the conflicting application requires the

composition to comprise a demethylating agent. However, it should be noted that claims 43-47 and 52-56 are open to the inclusion of a demethylating agent.

The other difference between claims 43-47 and 52-56 of the instant application and claim 1 of the conflicting application is: claim 1 of the conflicting application does not require the antigen to comprise autologous monocyte-derived dendritic cell pulsed with an inactivated non-recombinant human immunodeficiency virus (HIV) and a pharmaceutically acceptable carrier, wherein the inactivated non-recombinant HIV be chemically inactivated by 2,2'-dithiopyridine (also known as Aldrithiol-2 (AT-2)), and the composition expands in vivo expression of virus-specific CD8+ T cells, and said virus-specific CD8+ cells kill HIV-infected cells.

However, the deficiency noted in claim 1 of the conflicting application is fully compensated by Buseyne et al. Buseyne et al. teaches an antigen comprising autologous monocyte-derived dendritic cell pulsed with an inactivated non-recombinant human immunodeficiency virus (HIV) and a pharmaceutically acceptable carrier, wherein the inactivated non-recombinant HIV be chemically inactivated by 2,2'-dithiopyridine (also known as Aldrithiol-2 (AT-2)). The antigen of Buseyne et al. is a potent stimulator of T cell response. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use the antigen of Buseyne et al. with the composition of claim 1 of the conflicting patent application. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to induce a CTL response against infection with human immunodeficiency virus. One of ordinary skill in the art at the time the invention was

made would have had a reasonable expectation of success for doing so because the antigen of Buseyne et al. a potent stimulator of T cell response.

Additionally, while Buseyne et al. does not teach the use of autologous HIV; however, at the time the invention was made, it is well known in the vaccinology art that viral mutation of the epitopic sequence recognized by HIV-specific CTL can sidestep CTL recognition, as evidenced by Lieberman et al. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use an autologous HIV epitopic sequence. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to induce a CTL response against HIV. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because CTL recognition is important to controlling HIV infectivity.

The difference between claims 43-47 and 52-56 of the instant application and claim 1 of the conflicting application is: claim 1 of the conflicting application does not require the composition to comprise 10 nM of indinavir.

While, Buseyne et al. teaches an antigen that is a potent stimulator of T cell response, Buseyne et al. does not teach the composition with 10 nM of indinavir.

Buseyne et al. does not teach the composition with 10 nM of indinavir. However, the deficiency of Buseyne et al. is fully compensated by Lu et al. Lu et al. teaches that indinavir direct up-regulate proliferation and down regulate apoptosis of T cells. [Paragraph bridging pages 247-248.]

Thus, would have been prima facie obvious for one of ordinary skill in the art to combine the teachings of Buseyne et al. and Lu et al. One of ordinary skill in the art would have been motivated to do so to optimize CTL response against infection with human immunodeficiency virus. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because indinavir stimulates the proliferation of T cells, and the composition of Buseyne et al. stimulates potent CTL response.

It is recognized that claims require the composition to contain non-antiviral concentration of indinavir, specifically 10 nM. In the instant, Lu et al. teaches that the extent in which indinavir up-regulate proliferation and down regulate apoptosis of T cells varies at different concentrations of indinavir. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use any concentrations of indinavir, particularly since Lu et al. establishes that indinavir at various concentrations, ranging from .1nM to 1000 nM, stimulates direct up-regulate proliferation and down regulate apoptosis of T cells. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to determine the optimum concentration to optimize the proliferation of T cells. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because the determination of workable ranges or optimal value is routine practiced in the art.

This is a provisional obviousness-type double patenting rejection.

9. Claims 43-47 and 52-56 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2, 7 and 13 of copending Application No. 11/243094 in view of Lu et al., Lieberman et al., and Buseyne et al.

It is noted that Applicant's recent submission does not include a response to this rejection. In the instant case, the Office presumes that it is an inadvertent omission, and further presumes, in accordance with the other double patenting rejection, it is Applicant's intention to address this rejection upon allowance of claims 43-47 and 52-56. If so, Applicant's intention is noted and until the rejection is properly addressed, the rejection is maintained.

The difference between claims 43-47 and 52-56 of the instant application and claim 13 of the conflicting application is: claim 13 of the conflicting application does not require the inactivated HIV to be inactivated by aldithriol-2.

However, claim 7 of the conflicting patent application suggests the use of aldithriol-2 to inactivate the virus. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use aldithriol-2. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to inactive HIV. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because aldithriol-2 inactivates HIV.

The other difference between claims 43-47 and 52-56 of the instant application and claim 13 of the conflicting application is: claim 13 of the conflicting application does

not require the composition to comprise a pharmaceutically acceptable carrier.

However, claim 2 of the conflicting patent application suggests the use of a pharmaceutically acceptable carrier for the composition. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to include a pharmaceutically acceptable carrier with the composition. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to facilitate storage or delivery of the composition. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because the use of pharmaceutically acceptable carrier with pharmaceuticals is well practiced in the art.

The difference between claims 43-47 and 52-56 of the instant application and claim 13 of the conflicting application is: claim 13 of the conflicting application does not require the use of autologous HIV.

However, at the time the invention was made, it is well known in the vaccinology art that viral mutation of the epitopic sequence recognized by HIV-specific CTL can sidestep CTL recognition, as evidenced by Lieberman et al. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use an autologous HIV epitopic sequence. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to induce a CTL response against HIV. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because CTL recognition is important to controlling HIV infectivity.

The other difference between claims 43-47 and 52-56 of the instant application and claim 13 of the conflicting application is: claim 13 of the conflicting application does not require the dendritic cell to be autologous.

However, Buseyne et al. teaches the use of autologous dendritic cells pulsed with inactivated HIV to stimulate a potent MHC class-I-restricted T cell response. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use used autologous dendritic cells. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to stimulate a potent MHC class-I-restricted T cell response.

The last difference between claims 43-47 and 52-56 of the instant application and claim 1 of the conflicting application is: claim 13 of the conflicting application does not require the composition to comprise 10 nM of indinavir.

However, Lu et al. teaches that indinavir direct up-regulate proliferation and down regulate apoptosis of T cells. [Paragraph bridging pages 247-248.]

Thus, would have been prima facie obvious for one of ordinary skill in the art to include indinavir. One of ordinary skill in the art would have been motivated to do so to optimize CTL response against infection with human immunodeficiency virus. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because indinavir stimulates the proliferation of T cells, and the composition of claim 13 of the conflicting patent application, as evidenced by Buseyne et al. stimulates potent CTL response.

It is recognized that claims require the composition to contain non-antiviral concentration of indinavir, specifically 10 nM. In the instant, Lu et al. teaches that the extent in which indinavir up-regulate proliferation and down regulate apoptosis of T cells varies at different concentrations of indinavir. Thus, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use any concentrations of indinavir, particularly since Lu et al. establishes that indinavir at various concentrations, ranging from .1nM to 1000 nM, stimulates direct up-regulate proliferation and down regulate apoptosis of T cells. One of ordinary skill in the art at the time the invention was made would have been motivated to do so to determine the optimum concentration to optimize the proliferation of T cells. One of ordinary skill in the art at the time the invention was made would have had a reasonable expectation of success for doing so because the determination of workable ranges or optimal value is routine practiced in the art.

This is a provisional obviousness-type double patenting rejection.

Conclusion

10. No claims are allowed.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Le whose telephone number is (571) 272 0903. The examiner can normally be reached on Monday - Friday, 8 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce R. Campell can be reached on (571) 272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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